

CLAIMS

What is claimed is:

- 1 1. A method comprising:
2 providing a connector comprising a plurality of electrically conductive
3 elements in a thin, flexible, electrically insulating support; and
4 coupling lands on an integrated circuit (IC) to corresponding lands on a
5 substrate with the electrically conductive elements.
- 1 2. The method recited in claim 1, wherein the electrically conductive elements
2 comprise a compressible material.
- 1 3. The method recited in claim 2, wherein the compressible material comprises
2 a wire wad.
- 1 4. The method recited in claim 1, wherein the support comprises a hole for
2 each electrically conductive element.
- 1 5. The method recited in claim 1, wherein the support comprises a flexible
2 sheet.
- 1 6. The method recited in claim 1, wherein the electrically conductive elements
2 comprise crystals.
- 1 7. The method recited in claim 6, wherein the crystals comprise a coating of
2 electrically conductive material.
- 1 8. The method recited in claim 1 and further comprising:
2 securing the IC, support, and substrate in a package.

1 9. The method recited in claim 8, wherein securing is performed by a package
2 lid.

1 10. The method recited in claim 8, wherein securing comprises physically
2 compressing the IC, support, and substrate.

1 11. The method recited in claim 1 and further comprising:
2 providing an additional connector comprising a plurality of electrically
3 conductive elements in a thin, flexible, electrically insulating support; and
4 coupling lands on an IC package to corresponding lands on an additional substrate
5 with the electrically conductive elements of the additional connector.

1 12. The method recited in claim 11, wherein the additional substrate comprises
2 a printed circuit board.

1 13. A method comprising:
2 providing a connector comprising a plurality of electrically conductive
3 elements in a thin, flexible, electrically insulating support; and
4 coupling lands on an integrated circuit (IC) package to corresponding lands on a
5 substrate with the electrically conductive elements.

1 14. The method recited in claim 13, wherein the electrically conductive elements
2 comprise a compressible material.

1 15. The method recited in claim 14, wherein the compressible material
2 comprises a wire wad.

1 16. The method recited in claim 13, wherein the support retains the electrically
2 conductive elements substantially immobile with respect to X and Y axes but allows
3 the electrically conductive elements to move with respect to a Z axis.

1 17. The method recited in claim 13, wherein the support comprises a hole for
2 each electrically conductive element.

1 18. The method recited in claim 13, wherein the support comprises a flexible
2 sheet.

1 19. The method recited in claim 18, wherein the sheet comprises a plastic.

1 20. The method recited in claim 18, wherein the electrically conductive elements
2 comprise pins in the sheet.

1 21. The method recited in claim 13, wherein the electrically conductive elements
2 comprise regular geometric objects.

1 22. The method recited in claim 13, wherein the electrically conductive elements
2 comprise irregular geometric objects.

1 23. The method recited in claim 13, wherein the electrically conductive elements
2 comprise material from the group comprising aluminum, antimony, beryllium,
3 bismuth, cadmium, carbon, chromium, copper, gold, iron, lead, magnesium,
4 manganese, molybdenum, nickel, palladium, platinum, silicon, silver, tin, titanium,
5 tungsten, zinc, metal silicide, doped polysilicon, and plastic.

1 24. The method recited in claim 13, wherein the electrically conductive elements
2 comprise crystals.

1 25. The method recited in claim 24, wherein the crystals comprise a coating of
2 electrically conductive material.

1 26. The method recited in claim 13 and further comprising:
2 securing the IC package, support, and substrate in a package.

1 27. The method recited in claim 26, wherein securing is performed by a package
2 lid.

1 28. The method recited in claim 26, wherein securing comprises physically
2 compressing the IC package, support, and substrate.

1 29. A solderless method of mounting an integrated circuit (IC) on a substrate,
2 the method comprising:
3 positioning a thin, flexible, electrically insulating support on the substrate, so
4 that a plurality of electrically conductive elements on the support are aligned with
5 respect to a corresponding plurality of lands on the substrate; and
6 positioning the IC on the support, so that a plurality of lands on the IC are aligned
7 with respect to a corresponding plurality of electrically conductive elements on the
8 support.

1 30. The method recited in claim 29, wherein the operations are performed in the
2 order recited.

1 31. The method recited in claim 29 and further comprising:
2 compressing the IC, support, and substrate together to maintain electrical contact
3 between the lands on the IC and the lands on the substrate.

1 32. A solderless method of mounting an integrated circuit (IC) package on a
2 substrate, the method comprising:

3 positioning a thin, flexible, electrically insulating support on the substrate, so
4 that a plurality of electrically conductive elements on the support are aligned with
5 respect to a corresponding plurality of lands on the substrate; and
6 positioning the IC package on the support, so that a plurality of lands on the IC
7 package are aligned with respect to a corresponding plurality of electrically
8 conductive elements on the support.

1 33. The method recited in claim 32, wherein the operations are performed in the
2 order recited.

1 34. The method recited in claim 32 and further comprising:
2 compressing the IC package, support, and substrate together to maintain electrical
3 contact between the lands on the IC package and the lands on the substrate.

Slide 347
3 35. An electronic package comprising:
a die;
a substrate; and
4 a compressible connector to couple the die to the substrate.

1 36. The electronic package recited in claim 35, wherein the connector comprises
2 a plurality of electrically conductive elements to couple lands on the die to
3 corresponding lands on the substrate.

1 37. The electronic package recited in claim 36 and further comprising:
2 a compression element to maintain electrical contact between the lands on the die
3 and the lands on the substrate.

1 38. The electronic package recited in claim 37, wherein the compression
2 element is a lid comprising a member in contact with the die and a support coupled
3 to the substrate.

1 39. The electronic package recited in claim 36, wherein the electrically
2 conductive elements comprise a compressible material.

1 40. The electronic package recited in claim 35, wherein the connector
2 comprises:

3 a flexible support formed of electrically insulating material; and
4 a plurality of elements formed of electrically conductive material.

1 41. The electronic package recited in claim 40, wherein the support is formed of
2 plastic, and the plurality of elements are from the group consisting of wire wads,
3 pins, blobs, lumps, particles, and crystals.

1 42. The electronic package recited in claim 41, wherein the elements comprise a
2 coating of electrically conductive material.

1 43. The electronic package recited in claim 40, wherein the plurality of elements
2 comprise material from the group consisting of aluminum, antimony, beryllium,
3 bismuth, cadmium, carbon, chromium, copper, gold, indium, iron, lead, magnesium,
4 manganese, molybdenum, nickel, palladium, platinum, silicon, silver, tin, titanium,
5 tungsten, zinc, metal silicide, doped polysilicon, and plastic.

1 44. An electronic package comprising:
2 an integrated circuit (IC) package;
3 a substrate; and
4 a compressible connector to couple the IC package to the substrate.

1 45. The electronic package recited in claim 44, wherein the connector comprises
2 a plurality of electrically conductive elements to couple lands on the IC package to
3 corresponding lands on the substrate.

1 46. The electronic package recited in claim 45 and further comprising:
2 a compression element to maintain electrical contact between the lands on the IC
3 package and the lands on the substrate.

1 47. The electronic package recited in claim 46, wherein the compression
2 element is a lid comprising a member in contact with the IC package and a support
3 coupled to the substrate.

1 48. The electronic package recited in claim 45, wherein the electrically
2 conductive elements comprise a compressible material.

1 49. The electronic package recited in claim 44, wherein the connector
2 comprises:

3 a flexible support formed of electrically insulating material; and
4 a plurality of elements formed of electrically conductive material.

1 50. The electronic package recited in claim 49, wherein the support is formed of
2 plastic, and the plurality of elements are from the group consisting of wire wads,
3 pins, blobs, lumps, particles, and crystals.

Sub 51. The electronic package recited in claim 50, wherein the elements comprise a
coating of electrically conductive material.

1 52. The electronic package recited in claim 49, wherein the plurality of elements
2 comprise material from the group consisting of aluminum, antimony, beryllium,
3 bismuth, cadmium, carbon, chromium, copper, gold, indium, iron, lead, magnesium,
4 manganese, molybdenum, nickel, palladium, platinum, silicon, silver, tin, titanium,
5 tungsten, zinc, metal silicide, doped polysilicon, and plastic.

1 53. An electronic system comprising at least one electronic assembly comprising:
2 an integrated circuit (IC) package;
3 a substrate; and
4 a compressible connector to couple the IC package to the substrate.

1 54. The electronic system recited in claim 53, wherein the connector comprises a
2 plurality of electrically conductive elements to couple lands on the IC package to
3 corresponding lands on the substrate.

1 55. The electronic system recited in claim 54, wherein the at least one electronic
2 assembly further comprises a compression element to maintain electrical contact
3 between the lands on the IC package and the lands on the substrate.

56. A data processing system comprising:
a bus coupling components in the data processing system;
a display coupled to the bus;
external memory coupled to the bus; and
a processor coupled to the bus and including at least one electronic assembly comprising:
an integrated circuit (IC) package;
a substrate; and
a compressible connector to couple the IC package to the substrate.

1 57. The data processing system recited in claim 56, wherein the connector
2 comprises a plurality of electrically conductive elements to couple lands on the IC
3 package to corresponding lands on the substrate.

1 58. The data processing system recited in claim 57, wherein the at least one
2 electronic assembly further comprises a compression element to maintain electrical
3 contact between the lands on the IC package and the lands on the substrate.